

(of the genus *Creusia*, &c.) penetrate living corals without injury to them. They attach themselves when young to the surface of the coral, and finally become imbedded by the increase of the zoöphyte, without producing any defacement of the surface, or affecting its growth. Many of these *Serpulas* grow with the same rapidity as the zoöphyte, and finally produce a long tube, which penetrates deep within the coral mass; and, when alive, they expand a large and brilliant circle or spiral of delicate rays, making a gorgeous display among the coral polyps. Instinct seems to guide these animals in selecting those corals which correspond with themselves in rate of growth; and there is in general a resemblance between the markings of a *Creusia* and the character of the radiations of the *Astræa* it inhabits.

In recapitulation, the three most influential causes of the exclusion of reef-forming corals from coasts are the following:

I. The too low temperature of the waters along shores.

II. The too great depth of the waters.

III. The proximity of the mouths of rivers, on account of which sediment is distributed along the coast adjoining and over the sea bottom.

IV. RATE OF GROWTH OF CORALS.

The rate of growth of coral is a subject but little understood. We do not refer here to the progress of a reef in formation, which is another question complicated by many co-operating causes; but simply to the rapidity with which particular living species increase in size. There is no doubt that the rate is different for different species. It is moreover probable that it corresponds with the rate of growth of other allied polyps that do not secrete lime. The rate of growth of *Actiniæ* might give us an approximation to the rate of growth in coral animals of like size and general character; for the additional function of secreting lime would not necessarily retard the maturing of the polyp; and from the rate of growth of the same animals in the young state, we might